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Isolation of a novel member of the Rad 51/RecA family of DNA repair proteins

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We have isolated a putative new member of the rad51/recA family of proteins which are involved in double strand break and recombinational DNA repair. A database search identified a 1.5 kilobase (kb) partial cDNA clone with amino acid homology to the human homolog of the *S. cerevisiae* rad51 protein. This cDNA was contained in the IMAGE (Integrated Molecular Analysis of Genes and their Expression; Lennon et al., 1996) cDNA collection having been originally isolated from a human breast cDNA library. Identification and characterization of the 1.75 kb full-length cDNA revealed a 26% amino acid (aa) identity to human rad51 and a 22% aa identity to the yeast protein. We have mapped this new homolog, hhRAD51L, to human chromosome 14. The prescence of the consensus ATP binding sequences (Walker et al., 1982) of the rad51/recA homologs in this novel 350 aa protein suggests that it is a putative member of the rad52 epistatis group involved in the repair of damaged DNA. [Work was performed under the auspices of the US DOE by the Lawrence Livermore Natl. Lab. under contract W-7405-ENG-48.]

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